IN THE CLAIMS:

1-11. (Cancelled).

12. (new) A method of producing a recording medium containing an information signal, comprising:

applying a radiation beam, in response to an information signal, to a first area of an information layer of a recording medium to cause the first area of the information layer to assume a first state thereby forming a mark, and

applying the radiation beam to a second area of the information layer, before and after the mark, while pulsing the beam to cause the second area of the information layer to assume a second state that is different than the first state, the pulses including erase pulses having a erase power level ($P_e$) and a bias power level ($P_b$) between the erase pulses, the bias power level ($P_b$) being in a range between zero and the erase power level ($P_e$).

13. (new) The method of claim 12, in which:

the information layer includes a material having a phase that is reversibly changeable between the first state and the second state;

the first state is an amorphous state; and

the second state is a crystalline state.

14. (new) The method of claim 12, wherein the range of the bias power level ($P_b$) is less then a write power level ($P_w$).

15. (new) The method of claim 12, in which:

the bias power level ($P_b$) increases in the range between zero and the erase power level ($P_e$) as the recording speed (V) increases when the recording speed is below a chosen recording speed, and

the bias power level ($P_b$) is substantially identical to the erase power level ($P_e$) when the recording speed exceeds the chosen recording speed (29).

16. (new) The method of claim 12, wherein:

the erase pulses have a duty cycle of $T_e/T_b$, where $T_e$ is the duration of an erase pulse and $T_b$ is the time between two successive erase pulses, and

the duty cycle depends on the recording speed (V).

17. (new) The method of claim 16, in which the duty cycle increases in a range between nearly zero and unity as the recording speed (V) increases.

18. (new) A recording device comprising:

a radiation source for applying a radiation beam to an information layer of a recording medium;

means for moving the radiation beam along the information layer; and

control means to control the power of the radiation beam:

for causing a first area of the information layer to assume a first state to form a mark in response to an information signal; and

for pulsing the radiation beam including erase pulses having an erase power level ($P_e$) and a bias power level ($P_b$) between the erase pulses to a second area of the information layer, before and after the mark, to cause the second area of the information layer to assume a second state that is different than the first state, the bias power level ($P_b$) being in a range between zero and the erase power level ($P_e$).

19. (new) The recording device of claim 18, in which

the information layer includes a material having a phase that is reversibly changeable between the first state and the second state;

the first state is an amorphous state; and

the second state is a crystalline state.

20. (new) The recording device of claim 18, wherein the range of the bias power level ($P_b$) is less then a write power level ($P_w$).

21. (new) The recording device of claim 18, in which:

the bias power level ($P_b$) increases in the range between zero and the erase power level ($P_e$) as the recording speed (V) increases when the recording speed is below a chosen recording speed; and

the bias power level ($P_b$) is substantially identical to the erase power level ($P_e$) when the recording speed is above the chosen recording speed.

22. (new) The recording device of claim 18, wherein:

the erase pulses have a duty cycle of $T_e/T_b$, where $T_e$ is the duration of an erase pulse and $T_b$ is the time between two successive erase pulses, and

the duty cycle depends on the recording speed (V).

23. (new) The recording device of claim 22, in which the duty cycle increases in a range between nearly zero and unity as the recording speed (V) increases.

24. (new) A recording medium containing an information signal, produced by the method of claim 12.